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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,315	06/30/2003	Hiromichi Yamada	83394.0008	4002

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EXAMINER

LAI, VINCENT

ART UNIT	PAPER NUMBER
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2181

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/611,315	YAMADA ET AL.	
	Examiner	Art Unit	
	Vincent Lai	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.
2. Examiner withdraws the 35 USC 112 rejections after considering Amendments.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Auerbach et al (U.S. Patent # 6,879,266 B1), herein referred to as Auerbach

As per **claim 1**, Auerbach discloses a micro controller, comprising a CPU (See figure 2: Processor 202), performing processing in accordance with a program,

said micro controller further comprising:

a memory (See figure 2: Memory 204), storing: compressed codes (See figure 2: Compressed data 210), resulting from the conversion of original codes into variable

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length codes (See column 3, lines 7-8 and column 6, lines 20-23: Storage of variable length compressed instructions is done in memory);

an address conversion information (See column 8, lines 7-18: Compressed instructions are mapped), specifying the head address of each group of grouped compressed codes of variable length (See column 9, lines 3-10: There is offset field which indicates start of compressed block); and

a compressed code type information, specifying, according to each group, the code length of each compressed code of variable length contained in each group (See column 9, lines 43-49: Offset indicate length of compression); and

a compressed code processing part, specifying, from a code address output by the CPU, an address conversion information and compressed code type information to be referred, using the specified address conversion information and the compressed code type information to determine the corresponding compressed code address, and reading the corresponding compressed code (See column 8, lines 7-18: Compressed instructions are mapped).

As per **claim 2**, Auerbach discloses the micro controller as set forth in claim 1, wherein

the memory furthermore stores dictionary information for decompressing compressed codes into the original codes (See figure 3: A decompression engine 216 exists and contains a decode table 232 as well as other information to help decode) and

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the compressed code processing part refers the dictionary information to decompress the compressed code, which has been read, into the original code (See column 5, lines 60-64: Decompression will yield the original code).

As per **claim 3**, Auerbach discloses the micro controller as set forth in claim 1, wherein

said compressed code processing part stores information for identifying the area in said memory in which compressed codes are stored (See figure 2: Compressed Program Data 212), the area in said memory in which the address conversion information are stored (See column 8, lines 7-18: Compressed instructions are mapped), and the area in which the compressed code type information are stored (See figure 2: Compressed Program Instructions 210).

As per **claim 4**, Auerbach discloses the micro controller as set forth in claim 3, wherein

said memory stores said address conversion information in the order of blocks of original codes, and to store said compressed code type information in the order of the original codes (See figure 2: The instructions and data are stored in a corresponding fashion within blocks).

As per **claim 7**, Auerbach discloses the micro controller as set forth in claim 1, wherein

said compressed code processing part reads, from said memory and prior to reading a compressed code, a compressed code set, having a predetermined size and containing the compressed code to be read (See figure 3 and column 6, lines 1-9: The instructions are read from memory and the code has been compressed to a known length),

said micro controller is equipped with areas, respectively storing temporarily the address conversion information, the compressed code type information, and the compressed code set that were used just immediately before (See figure 2: Information saved in memory),

to use the address conversion information and the compressed code type information that are stored temporarily in said areas in a case where the code address output by the CPU is contained in the same block as the compressed code that was read just immediately before (See figure 2: The information found in memory is first sent to the decompression engine before it goes to the processor and acts like a buffer), and

to read the compressed code from the compressed code set that is stored temporarily in said area in a case where the compressed code corresponding to the code address output by the CPU is contained in the compressed code set that was read just immediately before (See figure 3: Decompressed code will be available for the processor).

As per **claim 8**, Auerbach discloses the micro controller as set forth in claim 1, wherein said compressed code contains the same program as the original code (See column 5, lines 60-64: Decompression will yield the original code).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auerbach in view of Henkel et al (U.S. Patent # 6,691,305), herein referred to as Henkel.

As per **claim 5**, Auerbach discloses the micro controller as set forth in claim 2.

Auerbach does not teach the manner in which the dictionary is organized according to code lengths.

Henkel does teach wherein said dictionary information are stored in areas that are divided according to the code lengths of the corresponding compressed codes (See figure 11A and 11D; column 28, lines 2-9; and column 26, lines 63-67: There are two areas in the dictionary, similar to what is taught by Auerbach (see rejection of claim 2). Compressed codes are clearly distinguished by code length and length tags "N.B." for figure 11A and "100" for figure 11D, thus the two areas are distinguished by code

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length), and in each area, said dictionary information are stored in the order of the codes of said corresponding compressed codes (See column 27, lines 2-5; and column 27, lines 7-9: Since the decoding tables are created during the compression of codes, it is assumed they are created (stored) in the order of the code of the corresponding compressed codes).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Auerbach with Henkel. Since Auerbach is silent on the manner in which data in the dictionary is organized (with exception to the two sections), one having ordinary skill in the art would either have to come up with their own organizational scheme or use one that has been previous taught. Henkel teaches a simple and elegant organization scheme that would not be too hard to implement on any system. One having ordinary skill in the art would be able to adapt the teachings of Henkel with that of Auerbach.

As per **claim 6**, Auerbach and Henkel teach the micro controller as set forth in claim 5.

Auerbach also teaches wherein said compressed code processing part specifies, from the compressed code type information, the area in which the dictionary information to be referred is stored, and, based on the compressed code, specifies the dictionary information to be referred that is contained in the specified area (See figure 3: There are areas specified to hold certain types of data in the dictionary).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Lai whose telephone number is (571) 272-6749. The examiner can normally be reached on M-F 8:00-5:30 (First BiWeek Friday Off).

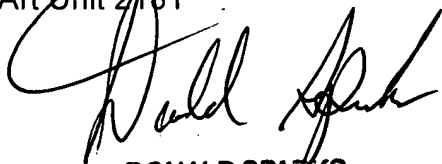
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information As per the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

vi
February 10, 2007

Vincent Lai
Examiner
Art Unit 2181



DONALD SPARKS
SUPERVISORY PATENT EXAMINER